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ABSTRACT

A field test of Minicourse 15, "Developing Student Independent Study Skills," was conducted with selected groups of elementary student teachers (N=32) and their resident teachers (N=24) to determine if participation of both student teachers and resident teachers in the minicourse activities yielded significantly higher mastery of the Minicourse 15 skills than for any one group participating alone. Data from pre- and post-minicourse video-taped episodes were analyzed, using analysis of variance, to determine acquisition of the ten minicourse skills by the respective groups. A control group was included. Analyses showed that the student teachers with participating resident teachers group was significantly higher in skill acquisition, although the student teacher group without participating resident teachers exceeded the resident teacher with participating student teacher group. All groups significantly passed the control group whose participants made no significant gains in skills. (Author)

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A PRESERVICE/INSERVICE FIELD TEST OF MINICOURSE 15: "DEVELOPING STUDENT INDEPENDENT STUDY SKILLS"*

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Minicourse 15, "Developing Student Independent Study Skills,"** is one of the approximately two dozen minicourses developed by the Far West Laboratory for Educational Research and Development, San Francisco, California. Although Minicourses are designed and developed for use by inservice teachers, their applications for preservice (or student) teaching are obvious. The objectives for this particular Minicourse are given in Appendix A. Briefly, its focus is on facilitating the development of teacher skills in developing the independent study skills of their elementary school age students. The teachers or student teachers who are to achieve these facilitating behaviors proceed through a series of instructional activities which devolve primarily on preparing for, conducting and evaluating outcomes of videotaped planning sessions with one or more of their own students.

The problem of the study was to determine whether mastery of the Minicourse 15 objectives by elementary student teachers is facilitated, unaffected or hindered by having their resident (or master) teachers take the course with them. Studies by Ward and Madsen of the Far West Laboratory (1) demonstrated that inservice teachers do master the skills of Minicourse 15 and at a significantly higher level than do comparable teachers in a control group.

The Hypotheses of the study were:

Hypothesis One: Student teachers completing the Minicourse 15 program and whose resident teachers are concurrently completing the program will achieve significantly higher scores (.05 level) on each variable of the Minicourse 15 Posttest than they achieved on the Minicourse 15 Pretest.

Hypothesis Two: The resident teachers completing the Minicourse 15 program and whose student teachers are also completing the program will achieve significantly higher scores (.05 level)on each variable of the Minicourse 15 Posttest than they achieved on the Minicourse 15 Pretest.

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**Also known as "Organizing Independent Learning at the Upper Elementary Level" in the currently-published version.

Hypothesis Three: The student teachers completing the Minicourse 15 program and whose resident teachers are not participating in the program will achieve significantly higher scores (.05 level) on each variable of Minicourse 15 Posttest than they achieved on the Minicourse 15 Pretest.

Hypothesis Four: There will be no significant differences between the Minicourse 15 Pretest and Posttest scores of the student teachers not participating in the Minicourse 15 program (the Control Group) and whose resident teachers are not participating in the Minicourse 15 program.

The groups of the study were as follows:

Group I — Student teachers participating in Minicourse 15 with resident teachers concurrently participating in Minicourse 15 (N=8)

Group II — Resident teachers participating in Minicourse 15 with their student teachers concurrently participating (N=8)

Group III — Student teachers participating in Minicourse 15 whose resident teachers are not participating (N=8)

Group IV — Student teachers not participating in Minicourse 15 (the Control Group) nor with resident teachers participating (N=8)

The population of the study was composed of selected groups of elementary student teachers in a fifth-year credential program and their respective resident teachers. The locale of the study was a large, largely Chicano elementary school district in northern California. The student teachers were assigned to the district by their own request plus the chance of administrative assignment. Most were young, Caucasian women in their early twenties each with an A. B. or a B. S. degree in a field other than education. None had formally student taught before. The resident teachers were primarily Caucasian women in their thirties and forties with an average of eight years of teaching experience. None had participated in the Minicourse 15 program before this study. University supervisors worked with the resident teachers, teachers aides and principals of the participating schools to help prepare the student teachers (both Experimental Group and Control Group) for mastery of the objectives of the University's California Standard Elementary Teaching Credential program.

The design of the study was:

Group I	O	X	O
Group II	O	X	O
Group III	O	X	O
Group IV	O		O

where O represents recording and judging of a videotaped teacher/student planning and X equals participation in the activities of Minicourse 15. The Experimental and Control Group student and resident teachers participated in the student teaching activities of University Elementary Student Teaching program, a program designed to insure competent beginning elementary teachers. The time spent by the Experimental Group student teachers in student teaching was reduced by the approximately 20 hours spent by them in the Minicourse 15 program activities.

Fifteen-minute videotapes of a teacher/pupil planning session were made before and after all Minicourse 15 program activities had been completed by the three Experimental Groups. The tapes were critiqued (scored) by independent, trained observers at the Far West Laboratory for Educational Research and Development whose critiquers must demonstrate a very high level of inter-rater agreement (.92-.99+) among themselves and with Laboratory trainers before actual judgments are made of the behaviors observed on the videotaped teacher/pupil planning sessions. The critiquers judged double-blind.

Results of the Data Analyses

The t-test was applied to the differences in pre-test and post-test mean scores determined for each member of the Experimental and Control Groups from viewing the videotaped teacher/pupil planning sessions. Level of significance was then judged for each difference. Alpha was set at the .05 level (two-tailed test).

Tables 1 through 4 show the outcomes of the Preservice/Inservice Field Test of Minicourse 15 with the four groups of the study (three Experimental and one Control).

Table 1 shows the outcomes of the data analyses designed to test Hypothesis One: The student teachers completing the Minicourse 15 program and whose resident teachers are concurrently completing the program will achieve significantly higher scores (.05 level) on each variable of the Minicourse 15 Posttest than they achieved on the Minicourse 15 Pretest.

Table 1. Pretest and Posttest Mean Scores, t-tests, Degrees of Freedom and Levels of significance on Each Variable of Minicourse 15 for Group 1: Student Teachers Participating in Minicourse 15 and whose Resident Teachers are Also Participating.

Variable	Mean Score		t	D.F.	Level of Significance
	Pre	Post			
1. Terms Specified	1.833	2.333	.889	7	--
2. Knowledge Specified	1.000	1.500	1.464	7	--
3. How Demonstrate	.833	2.083	2.611	7	.05
4. Resources Cited	2.167	2.667	2.236	7	.10
5. Necessary Steps	.500	2.167	2.988	7	.05
6. Steps Organized	1.000	2.167	1.659	7	--
7. Manipulatives Cited	.500	1.333	1.746	7	--
8. Checkpoints Set	.500	1.667	2.907	7	.05
9. Deadlines Set	.833	1.667	.881	7	--
10. Activities Set	.000	1.500	2.666	7	.05

Table 2 shows the outcomes of the data analyses designed to test Hypothesis Two: The resident teachers completing the Minicourse 15 program and whose student teachers are also completing the program will achieve significantly higher scores (.05 level) on each variable of the Minicourse 15 Posttest than they achieved on the Minicourse 15 Pretest.

Table 2. Pretest and Posttest Mean Scores, t-tests, Degrees of Freedom and Levels of Significance on each Variable of Minicourse 15 for Group 2: Resident Teachers Participating in Minicourse 15 and Whose Student Teachers are also Participating.

Variable	Mean Score		t	D.F.	Level of Significance
	Pre	Post			
1. Terms Specified	2.063	2.000	.284	7	--
2. Knowledge Specified	1.250	1.500	.607	7	--
3. How Demonstrate	1.438	2.125	1.883	7	--
4. Resources Cited	2.500	2.875	2.049	7	.10
5. Necessary Steps	1.125	3.000	4.710	7	.01
6. Steps Organized	1.250	3.000	4.249	7	.01
7. Manipulatives Cited	.875	2.250	2.308	7	.10
8. Checkpoints Set	.375	2.375	4.000	7	.01
9. Deadlines Set	.750	2.000	2.758	7	.05
10. Activities Set	.000	2.125	4.432	7	.01

Table 3 shows the outcomes of the data analyses designed to test Hypothesis Three: The student teachers completing the Minicourse 15 program and whose resident teachers are not participating in the program will achieve significantly higher scores (.05 level) on each Variable of Minicourse 15 Posttest than they achieved on the Minicourse 15 Pretest.

Table 3. Pretest and Posttest Mean Scores, t-tests, Degrees of Freedom and Levels of Significance on Each Variable of Minicourse 15 for Group 3: Student Teachers Participating in Minicourse 15 and Whose Resident Teachers are Not Participating in Minicourse 15.

Variable	Mean Score		t	D.F.	Levels of Significance
	Pre	Post			
1. Terms Specified	2.313	2.688	1.210	7	--
2. Knowledge Specified	1.125	1.000	1.000	7	--
3. How Demonstrate	1.438	2.375	2.813	7	.05
4. Resources Cited	2.000	2.750	1.528	7	--
5. Necessary Steps	.125	2.250	6.065	7	.01
6. Steps Organized	.250	2.500	5.463	7	.01
7. Manipulatives Cited	.125	1.375	5.401	7	.01
8. Checkpoints Set	.000	2.750	11.000	7	.01
9. Deadlines Set	.875	2.313	2.363	7	.10
10. Activities Set	.000	2.875	23.000	7	.01

Table 4 shows the outcomes of the data analyses designed to test Hypothesis Four: There will be no significant differences between the Minicourse 15 Pretest and Posttest scores of the student teachers not participating in Minicourse 15 program (the Control Group) and whose resident teachers are not participating in the Minicourse 15 program.

Table 4. Pretest and Posttest mean Scores, t-tests, Degrees of Freedom and Levels of Significance on each Variable of Minicourse 15 for Group 4: Student Teachers Not Participating in Minicourse 15 and Whose Resident Teachers are Not Participating.

Variable	Mean Score		[illegible]	D.F.	Level of Significance
	Pre	Post			
1. Terms Specified	1.375	1.287	.144	7	--
2. Knowledge Specified	.875	1.225	.784	7	--
3. How Demonstrate	1.313	1.475	.302	7	--
4. Resources Cited	2.375	1.850	1.024	7	--
5. Necessary Steps	.938	.787	.336	7	--
6. Steps Organized	.938	.787	.336	7	--
7. Manipulatives Cited	.375	.912	1.092	7	--
8. Checkpoints Set	.375	.912	1.092	7	--
9. Deadlines Set	.375	1.162	1.525	7	--
10. Activities Set	.000	.412	1.000	7	--

Discussion of Results

As can be observed from the tables, there were several significant or very significant differences between the Pretest and Posttest mean scores on several Variables for the members of the Experimental Groups with none observable for the members of the Control Group. Interestingly, the greatest and most frequent differences occurred for Group III, Student Teachers Participating In the Minicourse 15 and Whose Resident Teachers Were Not Participating.

The Group I participants (Student Teachers with Participating Resident Teachers) achieved significantly higher Posttest over Pretest mean scores on Minicourse 15 Variables Nos. 3, 5, 8, and 10. The Group II participants (Resident Teachers Participating in Minicourse 15 and Whose Student Teachers are Participating) achieved significantly higher Posttest over Pretest mean scores on Minicourse 15 Variables Nos. 5, 6, 8, 9, and 10. The Group III participants (Student Teachers Participating in Minicourse 15 and Whose Resident Teachers were Not Participating) achieved higher Posttest over Pretest mean Scores on Minicourse 15 Variables Nos. 3, 5, 6, 7, 8, and 10. The Group IV participants (the Control Group -- Student Teachers Not Participating in Minicourse 15 and Whose Resident Teachers Were Not Participating) achieved no significant differences between Pretest and Posttest mean scores on the Minicourse 15 variables. The null hypothesis is accepted for Group IV.

On further examination of the Tables it appears that, in this study, achievement of the Minicourse 15 Variables Nos. 1, 2, and 4 were not affected by the activities of participants in these areas of the Minicourse. Minicourse 15 Variables Nos. 5, 8, and 10 seem to be particularly affected here by the activities of participants in the Minicourse program. The other Variables Nos. 3, 6, 7, and 9 had varying degrees of achievement by participants in this study.

The developers of Minicourse 15 had been particularly interested in the impact of concurrent resident teacher participation in Minicourse 15 on student teacher

achievement of Minicourse 15 skills. The size of the groups in the study (N=8 each) and the narrow differences in skills attained between the two groups (Student Teachers Participating in Minicourse 15 and With and Without Resident Teachers Participating in Minicourse 15) make for caution in any interpretation of the differences between Pretest and Posttest mean scores found. Group III (Student Teachers Participating in Minicourse 15 and Whose Resident Teachers Are Not Participating) makes for some very interesting interpretations, however.

Overall, it would appear that most of the Minicourse 15 skills are achievable by both student and resident teachers who participate in the activities of Minicourse 15 during their regular instructional programs. It would also appear that participating in the activities of Minicourse 15 is quite useful in achieving the skills of that minicourse as compared to participation only in the regular student teaching program.

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REFERENCE

Ward, Betty, & Madsen, Marilyn. Patterns of teacher performance of seven teaching skills related to open education: Trained and untrained teachers. Paper presented at AERA Annual Meeting, Chicago, April 1974.

APPENDIX A

OBJECTIVES OF MINICOURSE 15

OBJECTIVE: TO DEVELOP TEACHER SKILL IN SPECIFYING LEARNING OBJECTIVES FOR INDEPENDENT STUDY CONTRACTS

Skills:
1. Specify what is to be learned.
2. Specify how learning is to be learned.

OBJECTIVE: TO BUILD TEACHER SKILL IN IDENTIFYING RESOURCES, OUTLINING LEARNING STEPS AND SETTING DEADLINES

Skills:
1. Identify the resources the student will use to complete his or her contract.
2. Outline in exact terms the major steps or tasks that are to be completed in order to achieve the designated objectives.
3. Establish deadlines for completing the contract as a whole and (depending on the size of the contract) for major tasks included in the contract.

OBJECTIVE: TO DEVELOP TEACHER SKILL IN THE USE OF REINFORCERS

Skills:
1. Establish checkpoints.
2. Describe anticipated outcomes.

* * * * * *

VARIABLES OF MINICOURSE 15 AS SPECIFIED FOR CRITIQUING (SCORING)

Variable	Minicourse 15 Skill From Which Derived
1. Terms Specified	Specify what is to be learned
2. Knowledge Specified	
3. How Demonstrate	Specify how learning will be demonstrated
4. Resources Cited	Identify the resources the student will use to complete his or her contract.
5. Necessary Steps	Outline in exact terms the major steps or tasks that are to be completed in order to achieve the designated objectives.
6. Steps Organized	
7. Manipulatives Cited	
8. Checkpoints Set	Establish checkpoints.
9. Deadlines Set	Establish deadlines for completing the contract.
10. Activities Set	Describe anticipated activities.